

(12) UK Patent Application (19) GB (11) 2 309 356 (13) A

(43) Date of A Publication 23.07.1997

(21) Application No 9701082.1

(22) Date of Filing 20.01.1997

(30) Priority Data

(31) 08007411

(32) 19.01.1996

(33) JP

(71) Applicant(s)

NEC Corporation

(Incorporated in Japan)

7-1, Shiba 5-Chome, Minato-Ku, Tokyo, Japan

(72) Inventor(s)

Kazumoto Iinuma

(74) Agent and/or Address for Service

Mathys & Squire

100 Grays Inn Road, LONDON, WC1X 8AL,
United Kingdom

(51) INT CL⁶

H04M 11/00

(52) UK CL (Edition O)

H4K KFH KOD4

(56) Documents Cited

EP 0569311 A1 WO 96/13119 A1 WO 95/11563 A1
US 5410326 A

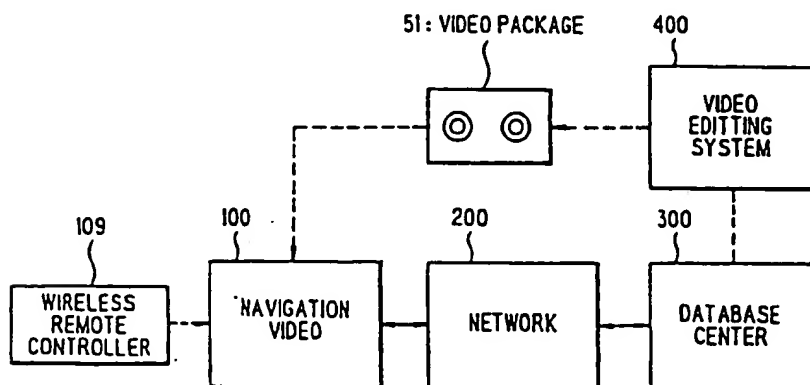
(58) Field of Search

UK CL (Edition O) H4K KFH KF50A KOD3 KOD4
INT CL⁶ H04M

(54) Network database system

(57) In order that a network database may be accessed easily by the general public, a network database system of the present invention has a navigation video for guiding a user to access a database center, the navigation video comprising: means for displaying a video picture of a video signal prepared for presenting introduction of data stored in a database of the database center; means for decoding guidance information for accessing the database, the guidance information multiplexed in the video signal; means for accessing the database by way of the database center, communicating with the database center through a network according to the guidance information, when indicated by the user; means for displaying messages according to the guidance information and information transmitted from the database center; and means for transmitting, to the database center, data input by the user according to the messages.

FIG. 1.



GB 2 309 356 A

FIG. 1

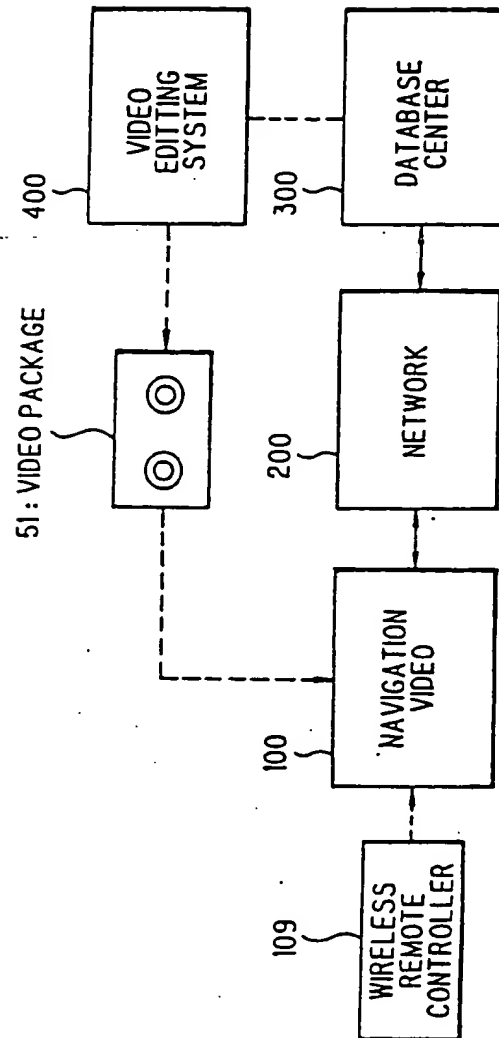


FIG. 2

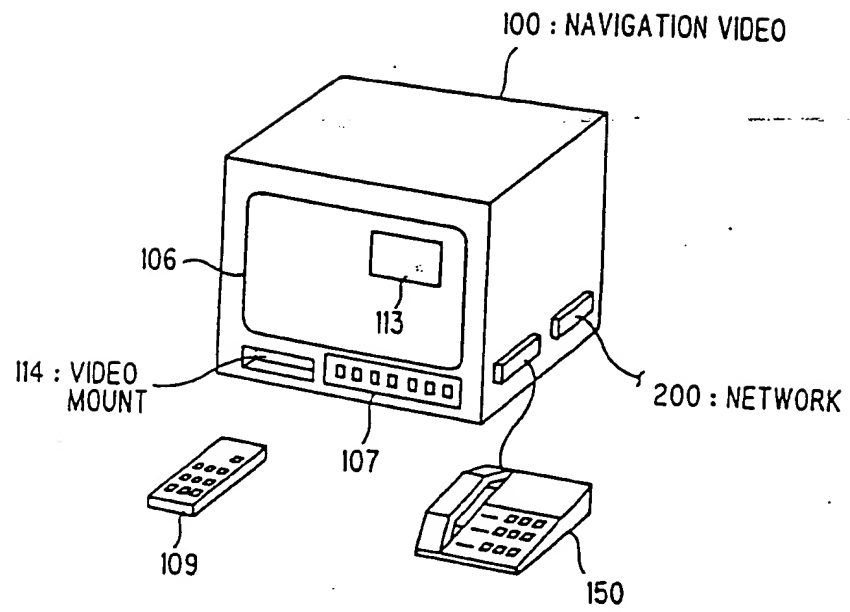


FIG. 3

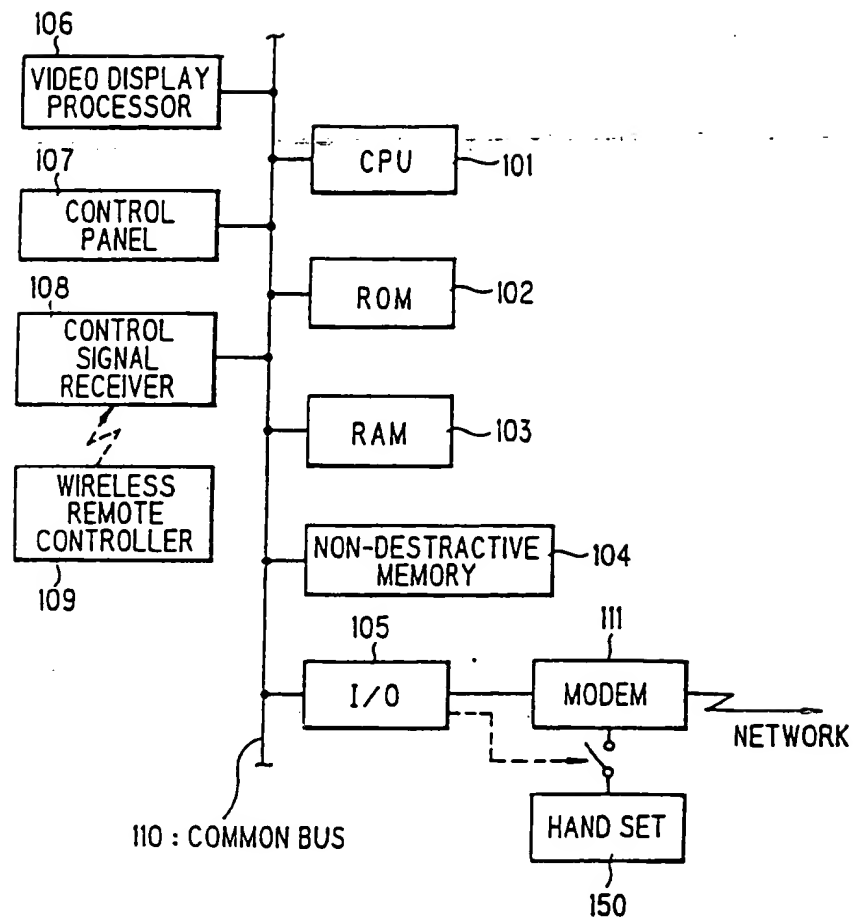


FIG. 4A

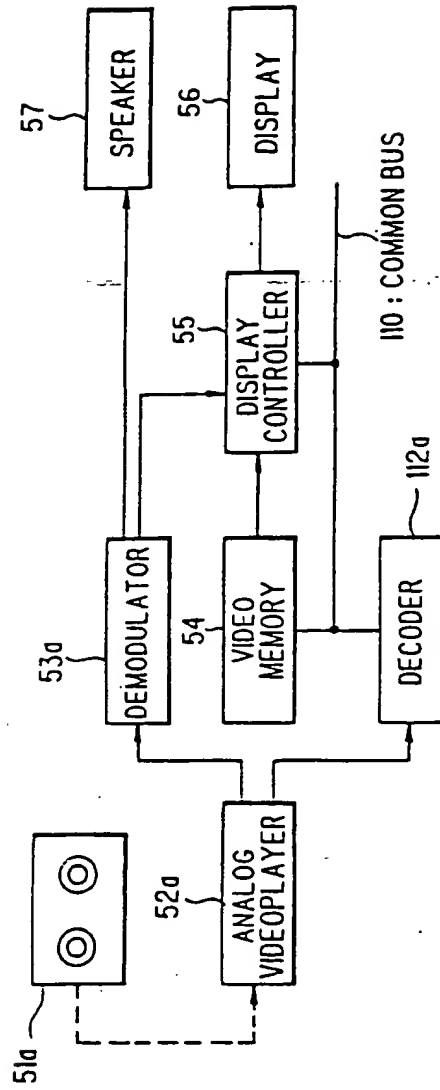


FIG. 4B

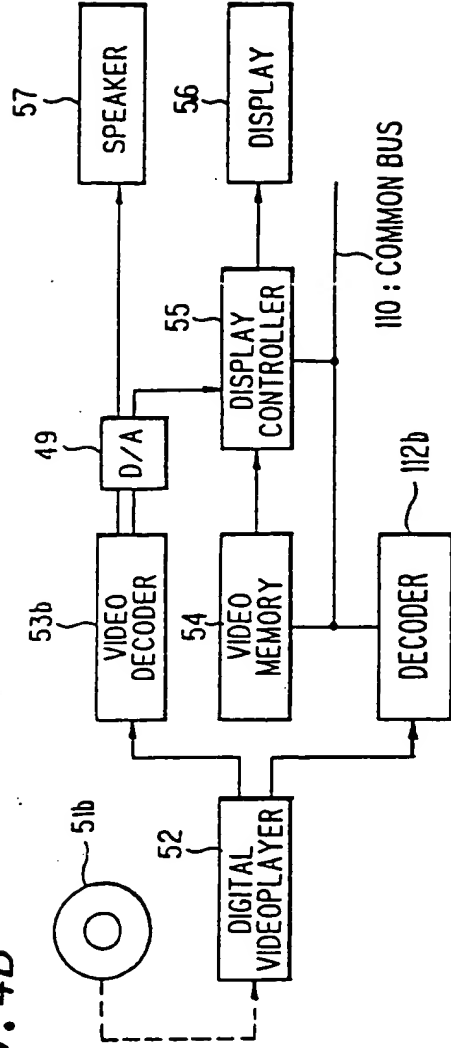


FIG. 5

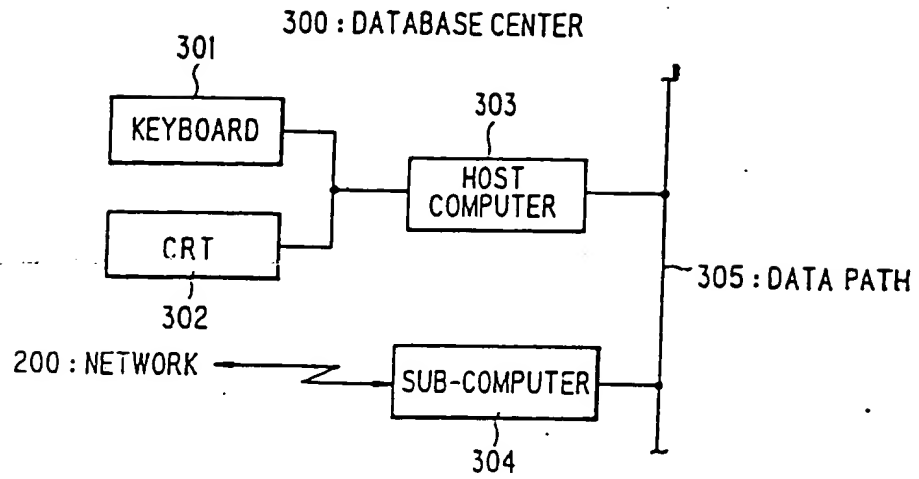


FIG. 6

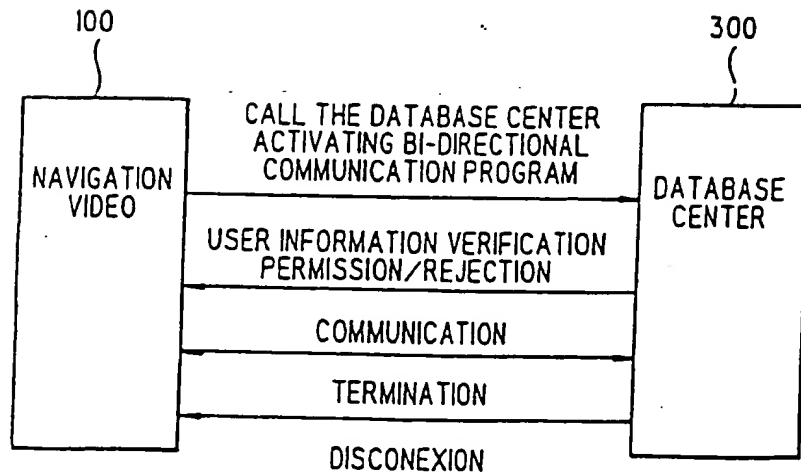


FIG. 7

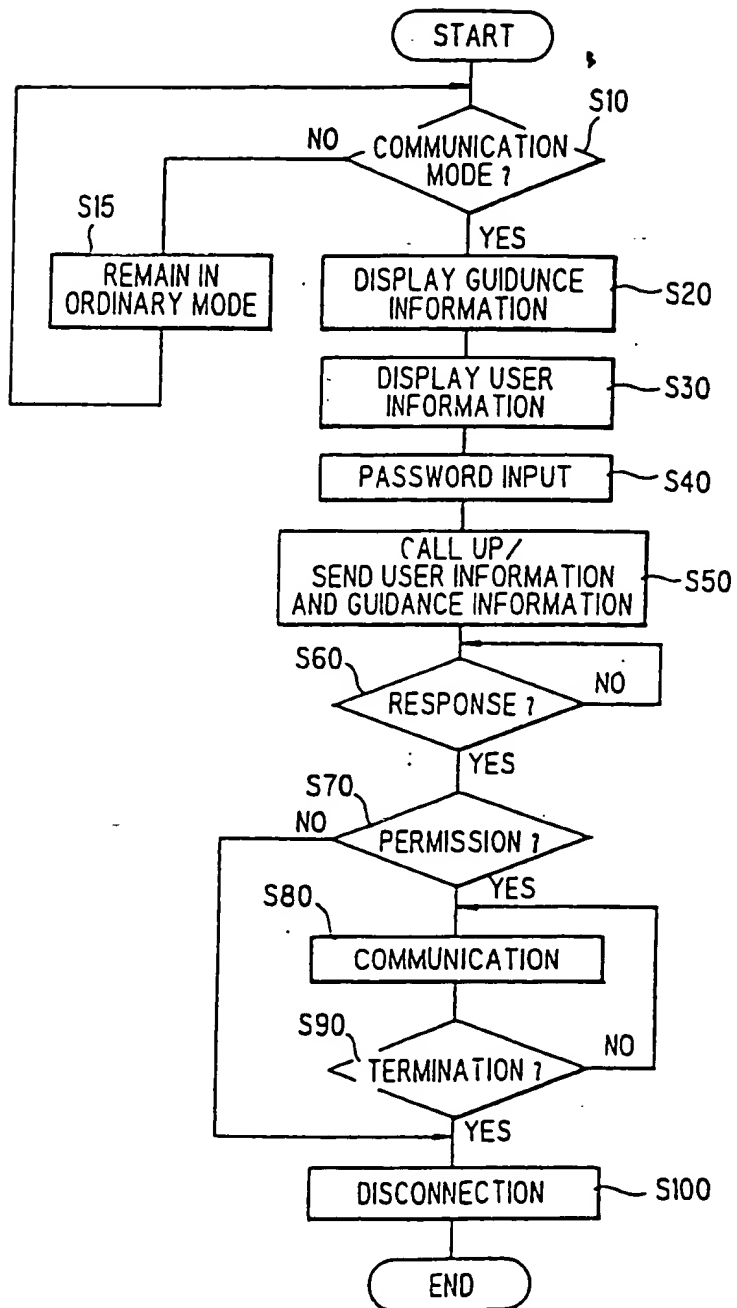
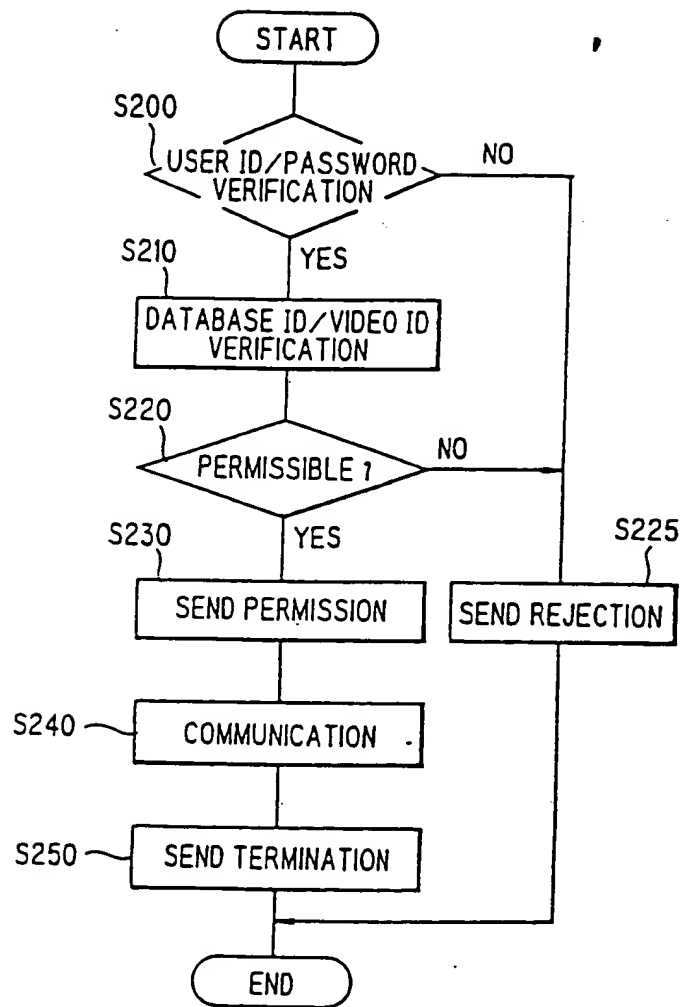


FIG. 8



8/13

FIG. 9

GUIDANCE INFORMATION

VIDEO ID : 123456
CALLING NUMBER : 03-444-5555
DATABASE ID : http://WWW.abc.jp

D10

USER INFORMATION

NAME : NIPPON TAPO
ADDRESS : 105 MINATO-KU SHIBA 1-1
USER ID : XYZ98765
PASSWORD : * * * *

D20

COMMUNICATION INFORMATION

YOU ARE WELCOME TO OUR ABC SHOPPING !!
THERE ARE TWO CATEGORIES OF THE QUILTS.
1. SEMI-DOUBLE SIZE (\$100)
2. DOUBLE SIZE (\$150)

PLEASE ENTER ITEM NUMBER !! 1

PLEASE SELECT A CARD FROM FOLLOWINGS!! 2

1. VISA 2. AMEX 3. MASTER

ENTER YOUR CARD NUMBER !! 00012345678

THANK YOU FOR YOUR GOOD SELECTION.
THE ARTICLE WILL BE FORWARDED ON FRIDAY THIS WEEK.

D30

FIG. 10

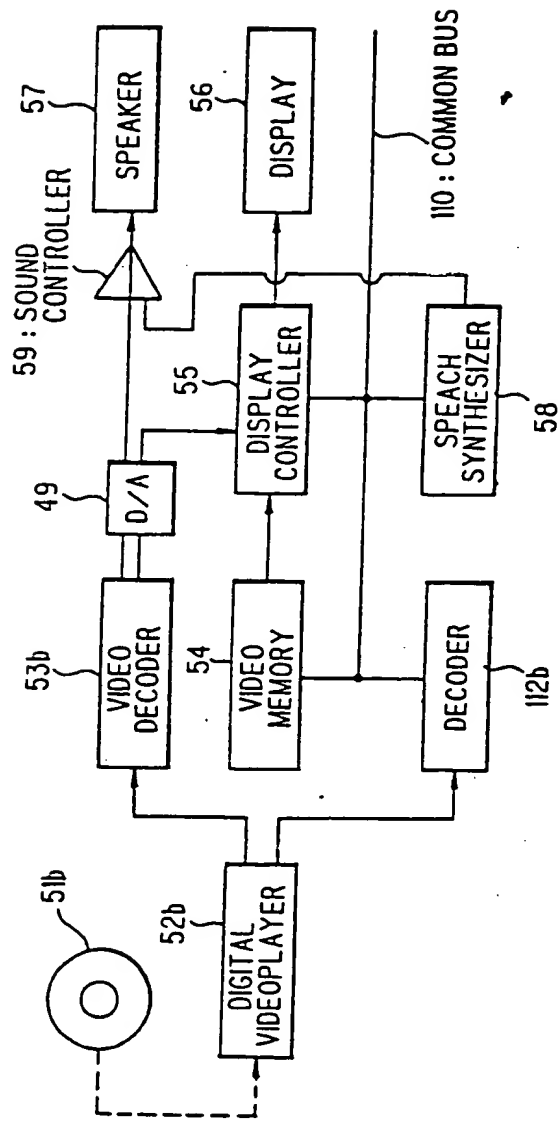


FIG. 11

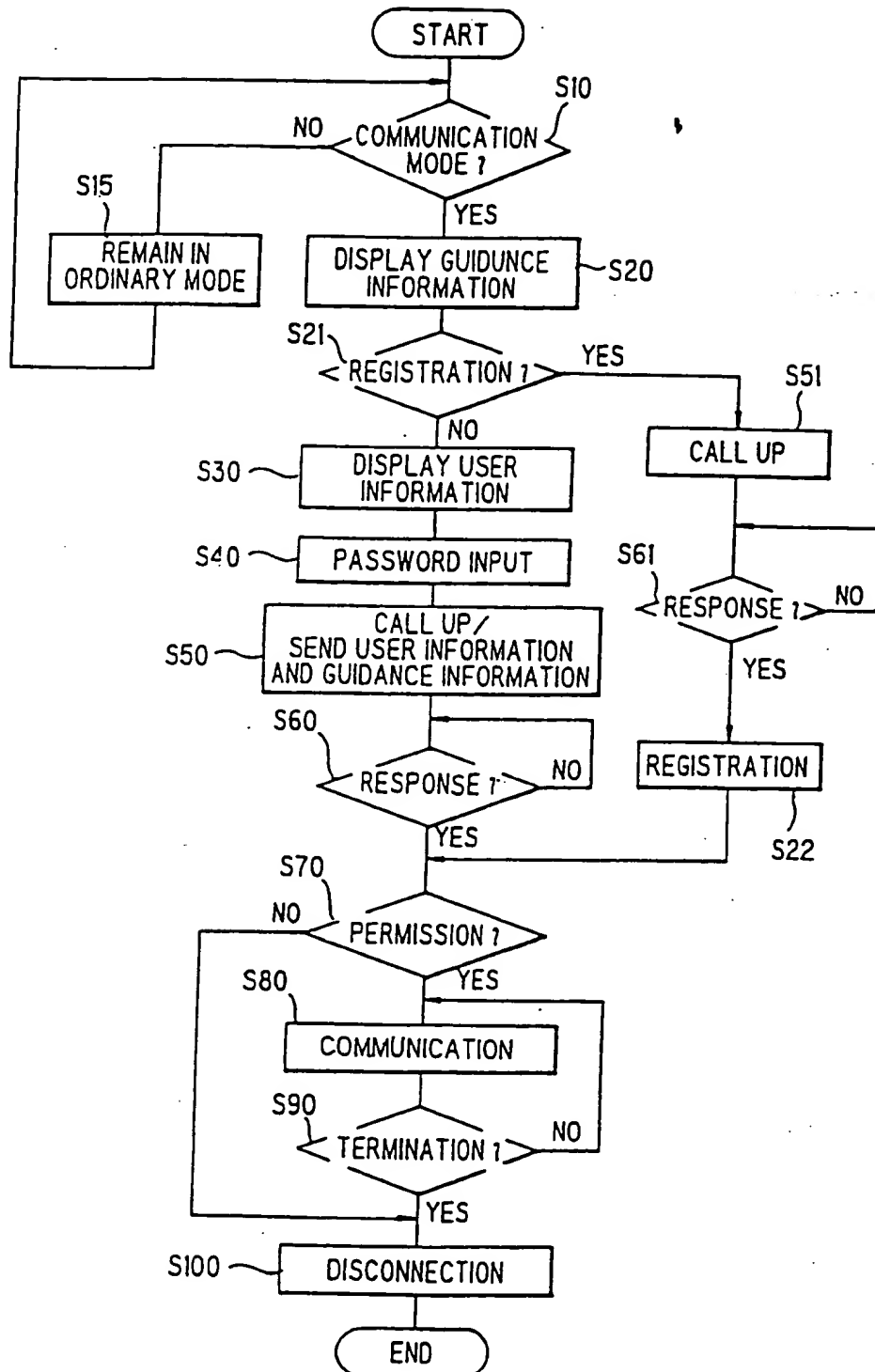


FIG. 12

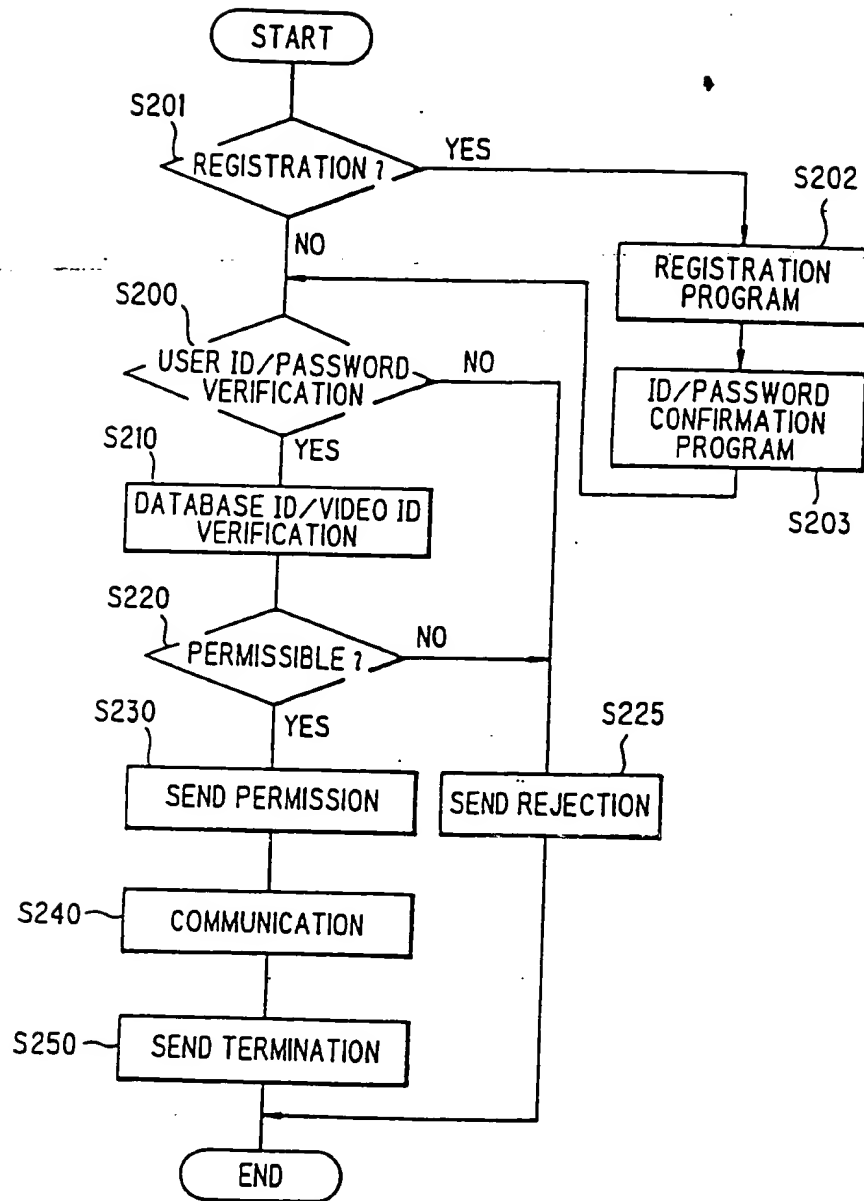


FIG. 13

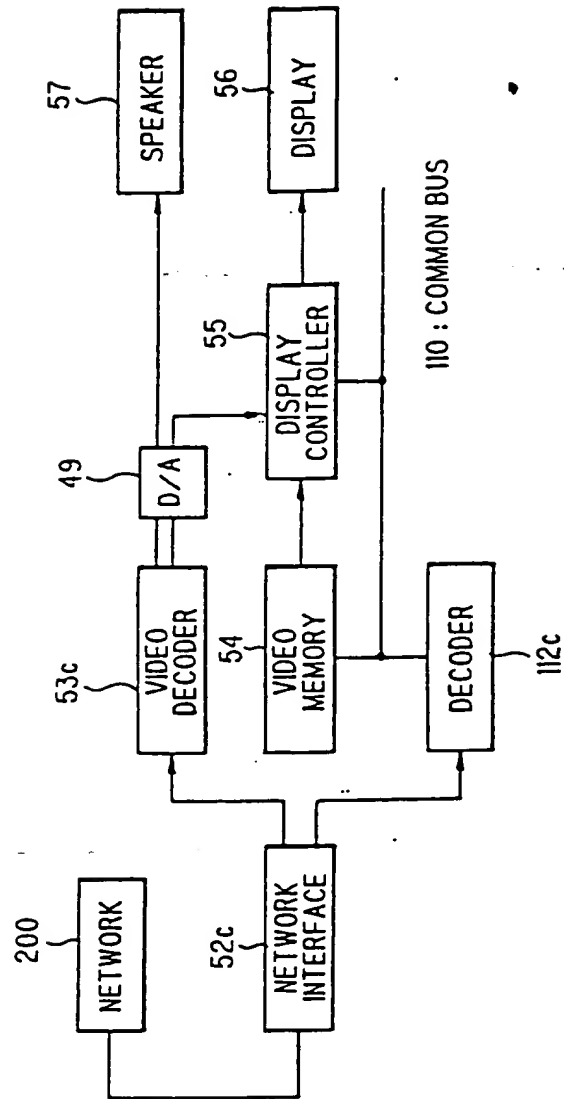
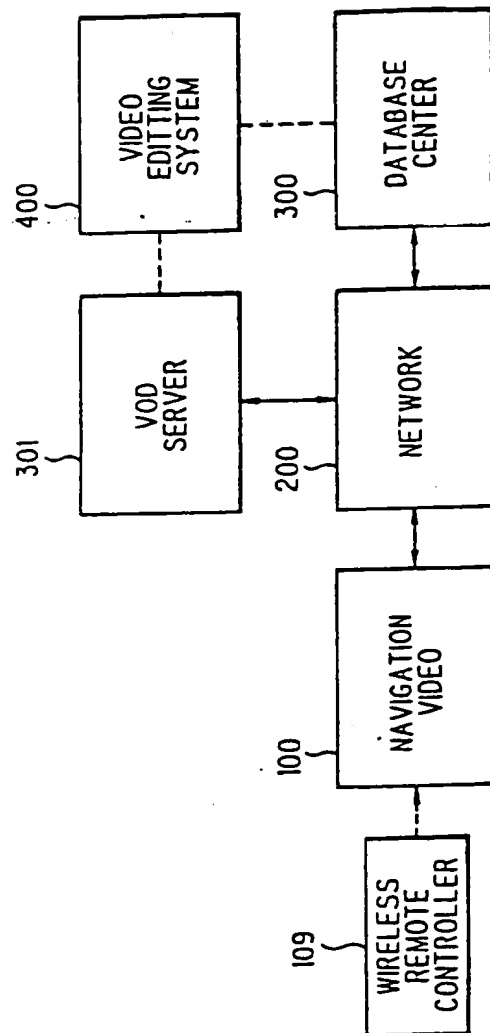


FIG. 14



2309356

NETWORK DATABASE SYSTEM

The present invention relates to a network database system, in particular to a navigation system wherein a video display system and a network communication system are integrated to provide for an easy database access.

5 Until now, the video display system has been developed mainly for recording and representing video pictures, unrelated with the network database system.

On the other hand, the network database system, that is, database service by way of computer networks such as the Internet or a BBS (Bulletin Board System), has been developed unrelated with the general public, because of its troublesome operations needed
10 for retrieving ID of a database center, confirming services provided therein and investigating its access root, for instance, resulting in a system inconvenient for the general public even if easy to be accessed by regular customers thereof.

Therefore, an object of at least the preferred embodiments of the present invention is to provide a network database system and its navigator for enabling easy access by the
15 general public by integrating the video display system and the network communication system.

Accordingly, in a first aspect the present invention provides a network database system comprising:

means for displaying a video picture representing a video signal prepared for the
20 presentation of data stored in a database of the database center;

means for decoding guidance information for accessing said database, said guidance information being multiplexed in said video signal;

means for accessing said database by means of the database center and communicating with the database center through a network according to said guidance
25 information and as instructed by the user;

means for displaying messages according to said guidance information and information transmitted from the database center; and

means for transmitting, to the database center, data input by the user according to said messages.

In a second aspect, the invention provides a network database system having a navigation video for guiding a user in the access of a database center, said navigation video comprising:

5 means for displaying a video picture representing a video signal prepared for the presentation of data stored in a database of a database center;

means for decoding guidance information for accessing said database, said guidance information being multiplexed in said video signal;

10 means for accessing said database by means of the database center and communicating with the database center through a network according to said guidance information and as instructed by the user;

means for displaying messages according to said guidance information and information transmitted from the database center; and

15 means for transmitting, to the database center, data input by the user according to said messages.

In a third aspect, the present invention provides apparatus for guiding a user in the access of a database center, comprising:

means for decoding guidance information for accessing a database in the database center, said guidance information being multiplexed in a video signal;

20 means for accessing said database by means of the database center, and communicating with the database center through a network according to said guidance information, as instructed by the user;

means for controlling the display of messages according to said guidance information and information transmitted from the database center; and

25 means for controlling transmission of data input by the user according to said messages to the database center.

In a fourth aspect, the present invention provides apparatus for guiding a user in the access of a database center, comprising:

30 means for displaying as a video picture a video signal prepared for presenting data stored in a database of the database center;

means for decoding guidance information for accessing said database, said guidance information being multiplexed in said video signal;

means for storing user information;

5 means for accessing said database by means of the database center with said user information, and communicating with the database center through a network according to said guidance information, as indicated by the user;

means for displaying messages according to said guidance information and information transmitted from the database center; and

10 means for transmitting data input by the user according to said messages to the database center.

In a fifth aspect, the present invention provides a method of communicating with a network database, said method comprising the steps of:

15 displaying a video picture representing a video signal prepared for the presentation of data stored in a database on a display;

decoding guidance information for accessing said database, said guidance information being multiplexed in said video signal;

accessing said database;

20 communicating with the database through a network and according to said guidance information and as instructed by the user;

displaying messages according to said guidance information and information transmitted from the database; and

transmitting data input by the user according to the messages to the database.

25 A preferred embodiment of the present invention provides a network database system having a navigation video for guiding a user to access a database center, the navigation video comprising:

means for displaying a video picture of a video signal prepared for presenting introduction of data stored in a database of the database.

center;

○ means for decoding guidance information for accessing the database, the guidance information multiplexed in the video signal;

means for accessing the database by way of the database center, communicating with the database center through a network according to the guidance information, when indicated by the user;

means for displaying messages according to the guidance information and information transmitted from the database center; and

means for transmitting, to the database center, data input by the user according to the messages.

Therefore, even the general public can gain access easily to a database and obtain desired information which a service provider intends to promote widely.

15 Preferred features of the present invention will now be described, purely by way of example only, with reference to the accompanying drawings, in which:-

the same numerals indicate the same or the corresponding parts, and:

20 FIG. 1 is a block diagram illustrating a network database system and its navigator of an embodiment of the present invention;

FIG. 2 illustrates an example of the navigation video 100 of FIG. 1;

FIG. 3 is a block diagram illustrating a configuration of the navigation video 100;

FIG. 4A is a block diagram illustrating configuration of an example of the video display processor 106 of FIG. 3;

FIG. 4B is a block diagram illustrating configuration of another example of the video display processor 106 of FIG. 3;

FIG. 5 is a block diagram illustrating system configuration of the database center 300 of FIG. 1;

5 FIG. 6 illustrates an example of communication between the navigation video 100 and the database center 300;

FIG. 7 illustrates processes performed in the CPU 101 of FIG. 3;

FIG. 8 illustrates processes performed in the sub-computer 304 of FIG. 5;

10 FIG. 9 illustrates display examples of messages to be displayed on the display 56 of FIGs. 4A and 4B;

FIG. 10 is a block diagram illustrating configuration of still another embodiment of the video display processor 106;

15 FIG. 11 is a flowchart illustrating another example of processes performed in the CPU 101 of FIG. 3;

FIG. 12 is a flowchart illustrating another example of processes performed in the sub-computer 304 of FIG. 5;

FIG. 13 is a block diagram illustrating configuration of still another example of the video display processor 106 of FIG. 3; and

20 FIG. 14 illustrates still another example of the navigation video 100 of FIG. 1.

Now, embodiments of the present invention will be described in
25 connection with the drawings.

FIG. 1 is a block diagram illustrating a network database system and its navigator of an embodiment of the present invention, wherein

○ a service provider prepares a video package 51 making use of a video editing system 400 registering service data in a database center 300. In the video package 51, guidance information for accessing the service data, registered in the database center 300, is together with
5 guidance telops for calling customer's attention. A navigation video 100 has a function for decoding the guidance information multiplexed in the video signal and a function for connecting and communicating with the database 300 by way of a network 200, according to the guidance information including information for accessing the service data in
10 the database center 300, such as telephone number or network ID, database server ID, database ID, video tape ID, and so on.

The video package 51 represents articles or services of the service provider briefly and attractively, detailed information thereof prepared in the database 300. When a customer, finding something attractive in
15 the video package 51 represented by the navigation video 100, switches it into a communication mode according to the guidance telops inserted in the video package 51, it connects and communicates with the database 300 automatically referring to the multiplexed guidance information synchronized with the guidance telops, namely, the infor-
20 mation of the telephone number or the network ID of the database center 300, database server ID of the service provider, database ID of the services, the videotape ID of the representation and so on.

Thus, a customer can obtain detailed information of his interested articles or services, which the service provider intends to provide.

25 As for multiplexing the guidance information, there can be applied an analog multiplexing method making use of vertical blanking intervals of analog video signals or a digital multiplexing method making

use of a part of bit sequences of digitized video signals.

○ To be more concrete, for the analog multiplexing, the guidance information may be multiplexed in place of character data in the method stipulated in the MPT (Ministry of Post and Telecommunication) Ordinance entitled, "The Standard System on Transmission for Character Multiplexed Television Broadcasting (MPT-77)", October 15, 1985.

Or, according to the method called the second generation EDTV or the EDTV-II, stipulated in the MPT Ordinance entitled, "The Revision of the Ordinance for Stipulating the Standard on the Standard Television Broadcasting (MPT-51)", July 7, 1995, the guidance information can be multiplexed making use of a part of discrimination signals to be multiplexed on the 22-th and 285-th vertical blanking scanning lines, as described in NIKKEI ELECTRONICS 1995.6.19 (no. 638) p. 140. By using undefined bits 15 and 16 of the discrimination signals, for example, a data signal of four bits per a frame, that is, 120 bits per second can be multiplexed.

The Vertical Blanking Interval (VBI) data transmission system is also applicable for the analog multiplexing of the guidance information.

As for the digital video signals, the guidance information may be multiplexed, for example, making use of a part of the fifth to seventh layers of the layered model of digital TV broadcasting, described by Nishizawa in "Fundamental Technologies for Digital Television Broadcasting; (2) Broadcasting Systems", the Journal of ITE (the Institute of Television Engineers of Japan), Vol. 48, No. 2, pp. 164 to 170 (See Table 1, p. 165). In the layered model, representation of the guidance information of the present invention being defined in the seventh layer of application definition, data of the guidance information are encoded

○ according to the sixth layer of presentation definition, which are multiplexed in the video data sequences according to the fifth layer of session definition, to be discriminated, distributed and clustered.

5 The guidance information is multiplexed synchronized with guidance telops inserted in video pictures. Data of 3 to 6 Mb/s are assigned for a channel of digital TV broadcasting. So, the guidance information data of 3 to 6 Kb/s can be transmitted when 0.1% of the assigned data can be shared for data transmission other than the video data. Therefore, data of 4500 to 9000 bits can be transmitted even in a
10 short program of 15 seconds, which are sufficient for the guidance information together with parity data.

A user of the navigation video 100 of the present invention controls information to be communicated with the database center 300 through the network 200, in addition to usual video operations. When
15 controlled in the communication mode, the navigation video 100 communicates with the database center 300, dialing and logging-in automatically.

As for the network 200, there can be applied a LAN (local area network), a public telephone network, an ISDN (Integrated Services
20 Digital Network according to the CCITT), a bi-directional cable network such as CATV (CABLE TeleVision), a wireless network by way of a mobile telephone and so on, with which the user can access a database connected to the LAN or others via a BBS service or the Internet.

An example of the navigation video 100 of FIG. 1 is illustrated in
25 FIG. 2, wherein corresponding parts with FIG. 1 are indicated by the same numerals and duplicated description is omitted. A window 113 on a video display processor 106, generally closed, opens when the naviga-

tion video 100 is controlled in the communication mode for displaying the guidance information, user information or logging information between the database center 300. The above communication information may be displayed using the whole screen of the video display processor 106, instead of the window 113.

The navigation video 100 is provided with a function for representing video pictures and a function for decoding the guidance information and controlling communication between the database center 300. The function for decoding the guidance information, and displaying it, can be provided with a simple modification of a conventional character multiplex receiver or an EDTV-II receiver, in the analog multiplexing, and in the digital multiplexing, with a simple modification of a conventional receiver prepared for the digital television broadcasting or the digital cable/optical fiber television system.

The navigation video 100 of FIG. 2 comprises a video mount 114 wherein a videotape, a videodisk or a CD-ROM is mounted. When video data are delivered through network as in a VOD (Video-On-Demand) system without any video package such as above mentioned, the video mount 114 can be omitted. In the case, as illustrated in FIG. 14, the video data are delivered from a VOD server 301 through the network 200 instead of the video package 51 of FIG. 1 and the navigation video 100 is provided with a decoder for the video data, wherein also a conventional STB (Set Top Box) for the VOD system is available with a simple modification.

FIG. 3 is a block diagram illustrating a configuration of the navigation video 100, wherein are connected to a common bus 110; a ROM (Read Only Memory) 102 for storing a system program

and data for performing it such as a font data for converting character codes into character patterns to be displayed, for example,

○ a CPU 101 for controlling the whole system according to the system program prepared in the ROM 102 by controlling information to be exchanged through the common bus 110,

a RAM (Random Access Memory) 103 for temporarily storing input data, output data and operational data of the CPU 101,

a non-destructive memory 104 for storing the user information,

an I/O interface 105 for switching an outer cable between a modem 111 and a hand-set 150 and controlling the modem 111, indicated by the CPU 101,

the video display processor 106 for displaying video pictures by decoding the video signals, and further, for decoding and displaying the guidance information multiplexed in the video signals and displaying information received from the database center 300 through the network 200,

a control panel 107 provided with a power switch, a volume control, ten keys and function keys, which are used for selecting a video program, in case of a random access video display such as a DVD (Digital Video Display), in the ordinary mode, and for inputting control code or numeral data in the communication mode, as an input device of the embodiment, and

a control signal receiver 108 for receiving input signals transmitted from a wireless remote controller 109 having similar switches and input keys with the control panel 107.

As for the user information to be prepared in the non-destructive memory 104, there are included user's name, address, telephone num-

ber, etc., in addition to the user ID (discrimination code) used for verifying password input by the user and accessing the database center 300. There may be also included user's sex, birth date, nationality, occupation, blood type and so on, optionally.

5 As for the non-destructive memory 104, there may be applied a non-volatile semiconductor memory such as a programmable memory, a flash memory or a ferro-electric memory, an IC card, a magnetic card, an optical card, a magnetic disk, an optical disk and so on, according to desired usage. Among them, detachable cards, which can
10 be carried apart of the video display processor 106, are convenient for the embodiment, since they are available even for a navigation video 100 situated at other than the user's domicile. Further, when a credit card is applied, more convenience can be introduced there, without any necessity of inputting bank numbers for the account settlement.

15 The modem 111 of the embodiment is preferably provided with an automatic calling function to the database center 300 according to telephone number indicated from outside, the CPU 101 in the embodiment.

Now, configuration of the video display processor 106 is described
20 in connection with FIG. 4A and FIG. 4B each illustrating an example to be applied for the analog system and the digital system, respectively. In FIGs. 4A and 4B, corresponding parts are indicated with the same numerals, and duplicated description is omitted.

Referring to FIG. 4A, an analog video package 51a is played back
25 by an analog video player 52a for generating video signals, of which video pictures and sounds are demodulated by a demodulator 53a to be displayed and output by a display 56 and a speaker 57. On the

other hand, the guidance information multiplexed in the video signals is decoded by a decoder 112a and stored in a video memory 54 to be displayed together with the video pictures controlled by a display controller 55.

5 In a similar way, a digital video package 51b of FIG. 4B is played back by a digital video player 52b for generating digital video signals, of which audio and video signals are decoded by a video decoder 53b and converted into analog signals by a D/A converter 49 to be output and displayed through a display 56 and a speaker 57, together with the
10 guidance information decoded by a decoder 112b and stored in a video memory 54, controlled by a display controller 55, in the same way.

The decoder 112a and the decoder 112b are provided for decoding the guidance information multiplexed in the analog video signals and the digital video signals, respectively. In the analog video signals, the guidance information is multiplexed in their vertical blanking
15 intervals, and can be decoded in a similar way with a conventional decoder prepared for decoding the character multiplexed signals or the data multiplexed signals. The guidance information inserted in certain parts in the bit stream of the digital video signals can be decoded in a
20 similar way with a conventional decoder of the digital TV signals.

The CPU 101 of FIG. 3 controls the video memory 54 through the common bus 110. The guidance information decoded by the decoder 112a/112b is once stored in the RAM 103 and then written in the video memory 54 by the CPU 101 after converted into character patterns
25 together with information received from the database center 300, to be displayed in a window of the display 56 as character messages.

FIG. 13 is a block diagram illustrating configuration of the video

display processor 106 of the embodiment, such as a modification of a conventional STB, to be applied in a VOD system.

Referring to FIG. 13, wherein corresponding parts with FIGs. 4A and 4B are indicated by the same numerals, a digital bit stream delivered through the network 200 is reformed by a network interface 52c and decoded by a video decoder 53c into video signals while the guidance information multiplexed in the bit-stream is decoded by a decoder 112c to be processed in the same way with the video display processors of FIGs. 4A and 4B. Principal performances of the video decoder 53c and the decoder 112c may be the same with the video decoder 53b and the decoder 112b of FIG. 4B.

Now, returning to FIG. 2, when the ordinary mode is indicated through the control panel 107 or the wireless remote controller 109, the CPU 101 controls the video display processor 106 in the ordinary mode and transfers thereto operational instructions input from the control panel 107 or the wireless remote controller 109. When the communication mode is designated, the CPU 101 controls the video display processor 106 in the communication mode for the navigation video 100 communicating with the database center 300 according to a protocol as illustrated in FIG. 6.

That is, first, a bi-directional communication program is activated in the navigation video 100 to call the database center 300, which returns a communication permission/rejection verifying the user ID and the password transmitted. When the communication is permissible, information is exchanged and then, the database center 300 sends a terminate signal for disconnecting the telephone communication.

FIG. 5 is a block diagram illustrating system configuration of the

database center 300, wherein comprises a sub-computer 304 for mediating between the network 200 and a host computer 303 having a keyboard 301 and a display 302. Connected with the navigation video 100, the sub-computer 304 performs demanded information processing together with the host computer 303 for returning response information to the navigation video 100, as follows.

In the host computer 303, there is prepared database information, such as the database server ID, the database ID or the video ID, corresponding to the guidance information transmitted multiplexed in the video signals. When the host computer receives the guidance information from a user through the sub-computer 304 by way of a data path 305, the host computer 303 verifies it and extracts necessary ID information therefrom. Operator of the host computer 303 inputs necessary information from the keyboard 301 monitoring the host computer 303 by the display 302.

The database center 300 may be constituted with a database server connected to a BBS, the Internet or a domestic LAN. The database server may be connected to the database center 300 through an ISDN cable or a CATV cable, or further it may be replaced with a database service prepared by a public telephone company.

Now, information processings performed in the embodiments heretofore described will be explained referring to flowcharts of FIG. 7 and FIG. 8.

FIG. 7 illustrates processes performed in the CPU 101 of FIG. 3 according to the system program, which is described with a program language executable by the CPU 101 and stored in the ROM 102, while the flowchart of FIG. 8 illustrating processes in the sub-computer 304

of the database center 300 of FIG. 5 performed according to another system program prepared therein.

As an example, a user, interested by a catalog video package, demands access to the database center 300 of a provider.

5 When the user turns on a power, the navigation video 100 is initiated in the ordinary mode. Selected by the user from the control panel 107 or the wireless remote controller 109, a video program is displayed on the display 56.

10 In the video program, there are prepared telops inserted for tempting the user to start the communication mode, together with the guidance information including telephone number or network ID of the database center, database server ID of the service provider, database ID of the services, the videotape ID etc., multiplexed in the video signals synchronized with the telops.

15 Tempted with a telop, the user indicates the communication mode by the control panel 107 or the wireless remote controller 109, which is detected by the CPU 101 at step S10 of FIG. 7. Thus, a bi-directional communication program is started, steps S20 to S100 following the step S10.

20 At step 20, the CPU 101 converts the guidance information decoded by the decoder 112 (112a, 112b or 112c) and temporarily stores it in the RAM 103 in character patterns and writes them in the video memory 54, controlling the display controller 55 to open a window (such as the window 113 of FIG. 2) in the display 56 and display the
25 guidance information there as a message to the user. All or a part of the message may be displayed superimposed directly on the video pictures. A display example D10 of the guidance information is illus-

trated in FIG. 9, wherein presented is a video ID of the video program, telephone number of an access point and a URL (Uniform Resource Locator used in the Internet) representing the database server ID and the database ID.

5 Then, at step 30, the CPU 101 presents another message on the display 56 for demanding input of the user information, by reading out and converting a character code sequence prepared in the ROM 102 for the message. Reading the message, the user inputs his password, for example, at step 40 from the control panel 107 or the wireless remote
10 controller 109. Another display example D20 of FIG. 9 illustrates an example of the message for inputting the user information, wherein a rectangular frame indicates user's input and the password is ciphered.

Confirming the displayed messages, the user pushes an execution key for starting the communication, and the CPU 101 sends a command to the modem 111 through the I/O interface 105 for calling up
15 the database center 300. So, connecting to the network 200 by auto-dialing, the modem 111 calls up the sub-computer 304 of the database center 300 and sends the user information and the guidance information, logging in automatically at step S50. Then, the CPU 101 waits
20 response from the sub-computer 304, looping at step S60.

On the other hand, receiving the user ID and the password in the calling from the navigation video 100, the sub-computer 304 of the database center 300 verifies them with registered data. When the user ID is not registered or inconsistent with the password, the sub-computer 304 sends a
25 rejection signal in reply to the navigation video 100 at steps S200 to S225 of FIG. 8.

When the user information shows permissible, the sub-computer

304 transfers the database ID and the video ID to be verified whether they are consistent with those prepared by the service provider. When inconsistency is found, the rejection signal is sent too to the navigation video 100, at steps S210 to S225. When they are confirmed to be correct, the sub-computer mediates communication between the host computer 303 and the navigation video 100, at steps S220 to S240, and the processings in FIG. 8 are terminated after sending a termination signal at step S250.

Returning to FIG. 7, the CPU 101 of the navigation video 100 forwards its control step from step S60 to step S100 when the rejection signal is received from the sub-computer 304 through the modem 111, commanding the modem 111 to cut the connection with the network 200. When the response signal shows permission, the CPU 101 communicates with the sub-computer 304 and presents received information on the display 56 by writing it in the video-memory 54.

Numerical information input by the user from the control panel 107 or the wireless remote controller 109 concerning category number and color number of the selected articles, and payment number or credit number of the user, for example, is transmitted to the sub-computer 304 through the modem 111, and at the same time displayed on the display 56 of the video display processor 106 to be confirmed and corrected by the user, controlled by the CPU 101. Still another display example D30 illustrates an example of a communication message presenting the communicated information and the user's input indicated in rectangular frames. The credit number may be ciphered such as the password in the display example D20 for a confidence.

Thus, until the termination signal is received from the sub-computer

304, the CPU 101 controls communication between the navigation video 100 and the database center 300, presenting the received information to the user, looping at steps S80 and S90 of FIG. 7. With the termination signal, these communication processes are terminated, the public cable disconnected controlled by the CPU 101 at step S100. Although there is no description in FIGs. 7 and 8, the user can terminate the communication at any time by pushing a termination key provided in both of the control panel 107 and the wireless remote controller 109.

Heretofore, the embodiment is described as if the sub-computer 304 of the database center 100 is accessed directly from a public cable. However, it is more general that the database center 300 is accessed by way of the Internet or a BBS service. In these cases, a gateway processor of the Internet or the BBS can be considered to perform the function of the sub-computer 304 of FIG. 5, their networks and database servers performing roles of the data path 305 and the host computer 303, respectively.

In FIGs. 2, 3, 4A, 4B and 13, examples of the navigation video 100 prepared exclusively for the purpose are illustrated. However, by preparing an appropriate application software, the navigation video can be realized with a personal computer together with a modem and a controllable video player.

For example, the CPU 101, the ROM 102, the RAM 103, the non-destructive memory 104, the I/O interface 105, the modem 111 and the control panel 107 can be replaced with a personal computer having an inner modem and an application program. Some gaming apparatuses having inner modems also can replace them. Further, some personal computers or gaming apparatuses provided with video representation

function can replace also the video player 52a, the video demodulator 53a, the speaker 57, the video memory 54, the display controller 55 and the display 56 of FIG. 4A. It is the same thing with the digital video display processor of FIG. 4B. Only the decoder 112a/112b/112c
5 controllable by the CPU 101 is needed in addition.

On the contrary, the embodiment can be also realized with a conventional video player provided with adapter means comprising a decoder for decoding the guidance information, an input device, a modem, and a communication controller.

10 FIG. 10 is a block diagram illustrating still another embodiment of the video display processor 106 of FIG. 3, wherein provided, further to the embodiment of FIG. 4B for example, a speech synthesizer 58 and a sound controller 59.

The display examples D10 to D30 illustrate examples of the bi-
15 directional communication between the navigation video 100 and the database center 300, which is performed exclusively with character data. However, for attracting more customers, for example, more delicate information services are desired. For the purpose, received information from the database center 300 is also delivered to the speech
20 synthesizer 58 through the common bus 110, in the embodiment, to be converted into speech signals, which are mixed with audio signals from the D/A converter 49 by the sound controller 59 and output from the speaker 57. The sound controller 59 may changeover the two signals.

FIG. 11 and FIG. 12 are flowcharts illustrating another example
25 of the control sequence for controlling the communication between the navigation video 100 and the database center 300. In the control sequences of FIGs. 7 and 8, accesses from users having no registered user

○ ID are rejected a priori. However, there are database services such as those applied in TV broadcasting where newcomer users are preferably registered with a simple procedure. In the control sequences of FIGs. 11 and 12, processes for registering user ID for a newcomer user are provided.

FIG. 11 and FIG. 12 correspond to FIG. 7 and FIG. 8, respectively, and the same or corresponding processes are indicated by the same step numbers.

In the processes of FIG. 11 in the navigation video 100, when it is controlled in the communication mode and the guidance information is displayed at the step S20, it is checked whether an initial registration for the database 300 of the user is needed or not at step S21 of FIG. 11, which may be performed either by the user himself or by the CPU 101. When the registration is not necessary, processes flow in the same way as FIG. 7 to the steps S30 to S100. When the registration is indicated, the navigation video 100 calls the database center 300 at step S51 and the registration processes are performed according to information transmitted from the database center 300 at steps S61 and S21. Then, the control follows ordinary sequences of the steps S70 to S100.

In the database center 300, steps S201 to S203 for the registration are provided in addition to the steps of FIG. 8 as illustrated in FIG. 12. When a registration is required from a user, a registration program is activated at step S202 for guiding the user's registration. When necessary information is obtained from the user, confidence of the information such as the credit number is verified by an ID/password confirmation program at step S203 and demands the user to confirm

the registered user ID and its password, in a similar way with an on-line registration in a BBS. After the confirmation, the control sequences return to the ordinary processes of the steps S200 to S250.

Thus, a newcomer user can be registered with a simple procedure
5 n the embodiment.

Heretofore, the present invention is described in connection with embodiments applied for a database center for showing articles of a provider, but it is easily understood that a various application can be considered in the scope of the invention. For example, it can be
10 effectively applied for databases of training instruction data, teaching materials, education guidance information or electronic magazines.

Each feature disclosed in this specification (which term includes the claims) and/or shown in the drawings may be incorporated in the invention independently of other disclosed and/or illustrated features.

The text of the abstract filed herewith is repeated here as part of the specification.

In order that a network database may be accessed easily by the general public, a network database system of the present invention has a navigation video for guiding a user to access a database center, the navigation video comprising:

means for displaying a video picture of a video signal prepared for presenting introduction of data stored in a database center;

means for decoding guidance information for accessing the database, the guidance information multiplexed in the video signal;

means for accessing the database by way of the database center, communicating with the database center through a network according to the guidance information, when indicated by the user;

means for displaying messages according to the guidance information and information transmitted from the database center; and

means for transmitting, to the database center, data input by the user according to the messages.

CLAIMS

1. A network database system comprising:
means for displaying a video picture representing a video signal prepared for the
5 presentation of data stored in a database of a database center;
means for decoding guidance information for accessing said database, said
guidance information being multiplexed in said video signal;
means for accessing said database by means of the database center and
communicating with the database center through a network according to said guidance
10 information and as instructed by the user;
means for displaying messages according to said guidance information and
information transmitted from the database center; and
means for transmitting, to the database center, data input by the user according to
said messages.
- 15 2. A network database system having a navigation video for guiding a user
in the access of a database center, said navigation video comprising:
means for displaying a video picture representing a video signal prepared for the
presentation of data stored in a database of a database center;
means for decoding guidance information for accessing said database, said
20 guidance information being multiplexed in said video signal;
means for accessing said database by means of the database center and
communicating with the database center through a network according to said guidance
information and as instructed by the user;
means for displaying messages according to said guidance information and
25 information transmitted from the database center; and
means for transmitting, to the database center, data input by the user according to
said messages.

3. A network database system as recited in claim 2, wherein said guidance information is multiplexed in said video signal by making use of vertical blanking intervals of said video signal according to a character multiplex broadcasting standard.

5 4. A network database system as recited in claim 2, wherein said guidance information is multiplexed in said video signal by making use of vertical blanking intervals of said video signal according to a data multiplex broadcasting standard.

5. A network database system as recited in claim 2, wherein said guidance information is multiplexed in said video signal by making use of a part
10 of a discrimination signal multiplexed in said video signal according to an EDTV-11 standard.

6. A network database system as recited in claim 2, wherein said guidance information is multiplexed in said video signal by making use of a part of bit sequences of said video signal when digitized.

15 7. A network database system as recited in claim 2, wherein said guidance information is multiplexed in said video signal synchronized with telops inserted in said video picture.

8. A network database system as recited in any of claims 2 to 7, wherein said video signal is recorded in one of a magnetic tape, an optical disk and a magnetic disk.

20 9. A network database system as recited in any of claims 2 to 7, wherein said video signal is stored in a VOD server and delivered to the system through a network.

10. A network database system as recited in any of claims 2 to 9, wherein said network is a network prepared for a BBS.

11. A network database system as recited in any of claims 2 to 9, wherein said network is the Internet.

12. A network database system as recited in any of claims 2 to 9, wherein said network is one of a public telephone network, a mobile telephone network, an ISDN and a LAN.

13. A network database system as recited in any of claims 2 to 12, further comprising means for on-line-registering information relating to a user for accessing said database.

14. Apparatus for use in guiding a user in the access of a database center, comprising:

means for decoding guidance information for accessing a database in the database center, said guidance information being multiplexed in a video signal;

means for accessing said database by means of the database center, and communicating with the database center through a network according to said guidance information, as instructed by the user;

means for controlling the display of messages according to said guidance information and information transmitted from the database center; and

means for controlling transmission of data input by the user according to said messages to the database center.

15. Apparatus as recited in claim 13, comprising a video player.

16. Apparatus for controlling a television receiver comprising apparatus as recited in claim 14.

17. Apparatus for guiding a user in the access of a database center, comprising:
means for displaying as a video picture a video signal prepared for presenting data
stored in a database of the database center;

5 means for decoding guidance information for accessing said database, said
guidance information being multiplexed in said video signal;

means for storing user information;

means for accessing said database by means of the database center with said user
information, and communicating with the database center through a network according to
10 said guidance information, as indicated by the user;

means for displaying messages according to said guidance information and
information transmitted from the database center; and

means for transmitting data input by the user according to said messages to the
database center.

15 18. Apparatus as recited in claim 14 or 17, comprising a navigation video to
provide said means.

19. Apparatus as recited in claim 17 or 18, wherein:

said means for displaying a video picture comprises an analog video player; and
said means for decoding guidance information comprises a television receiver prepared
20 for receiving character multiplexed broadcasting.

20. Apparatus as recited in claim 17 or 18, wherein:

said means for displaying a video picture comprises an analog video player; and
said means for decoding guidance information comprises a television receiver
prepared for receiving data multiplexed broadcasting.

25 21. Apparatus as recited in claim 17 or 18, wherein:

said means for displaying a video picture comprises an analog video player; and

○
said means for decoding guidance information comprises a television receiver prepared according to an EDTV-II standard.

22. Apparatus as recited in claim 17 or 18, wherein:
5 said means for displaying a video picture comprises a video digital player; and
said means for decoding guidance information comprises a television receiver prepared for receiving digital television broadcasting.

23. Apparatus as recited in claim 17 or 18, wherein said means for displaying a video picture is adapted to play back at least one of a CD-ROM and a DVD.

10 24. Apparatus as recited in claim 17 or 18, wherein:
said means for displaying a video picture comprises an STB prepared for displaying video data delivered from a VOD server.

25. Apparatus as recited in claim 17 or 18, wherein:
said means for storing user information comprises one of a non-destructive
15 semiconductor memory, a magnetic disk and an optical disk.

26. Apparatus as recited in claim 17 or 18, wherein:
said means for storing user information comprises one of a detachable magnetic card, a detachable optical card and a detachable IC card.

27. Apparatus as recited in claim 17 or 18, wherein said messages are
20 converted into speech signals and output from a speaker synchronized with said messages displayed.

28. A method of communicating with a network database, said method comprising the steps of:

- 5 displaying a video picture representing a video signal prepared for the presentation of data stored in a database on a display;
- decoding guidance information for accessing said database, said guidance information being multiplexed in said video signal;
- accessing said database;
- communicating with the database through a network and according to said
- 10 guidance information and as instructed by the user;
- displaying messages according to said guidance information and information transmitted from the database; and
- transmitting data input by the user according to the messages to the database..

29. The method of Claim 27, further comprising the step of converting a digital
15 bit stream containing said information transmitted from the database into a video signal to displaying said information.

30. A network database system substantially as herein described with reference to and as shown in Figure 1 or 14 of the accompanying drawings.

31. Apparatus for guiding a user in the access of a database center substantially
20 as herein described with reference to Figure 2, 3 and any one of Figures 4A, 4B, 10 and 13 of the accompanying drawings.

32. A method of communicating with a network database substantially as herein described with reference to Figures 7 and 8 or Figures 11 and 12 of the accompanying drawings.



The
Patent
Office

28

Application No: GB 9701082.1
Claims searched: 1-32

Examiner: Al Strayton
Date of search: 15 April 1997

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): H4K: KF50A; KFH; KOD3; KOD4

Int Cl (Ed.6): H04M

Other:

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	EP 0 569 311 A1 (IBM) See the abstract	1,2,14,17, 28 at least
X	WO 96/13119 A1 (GRUNDIG) See the abstract	-
X	WO 95/11563 A1 (SASKTEL) See the abstract	-
X	US 5 410 326 (GOLDSTEIN) See the abstract	-

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.